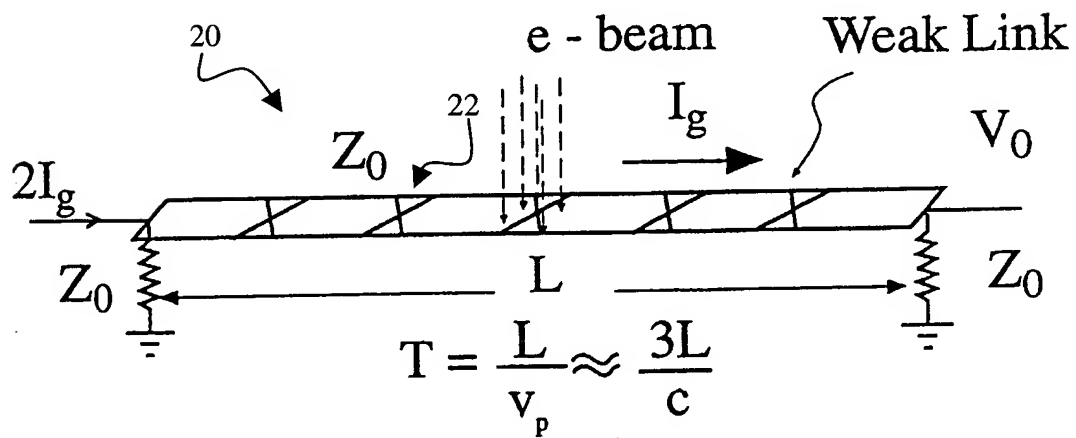
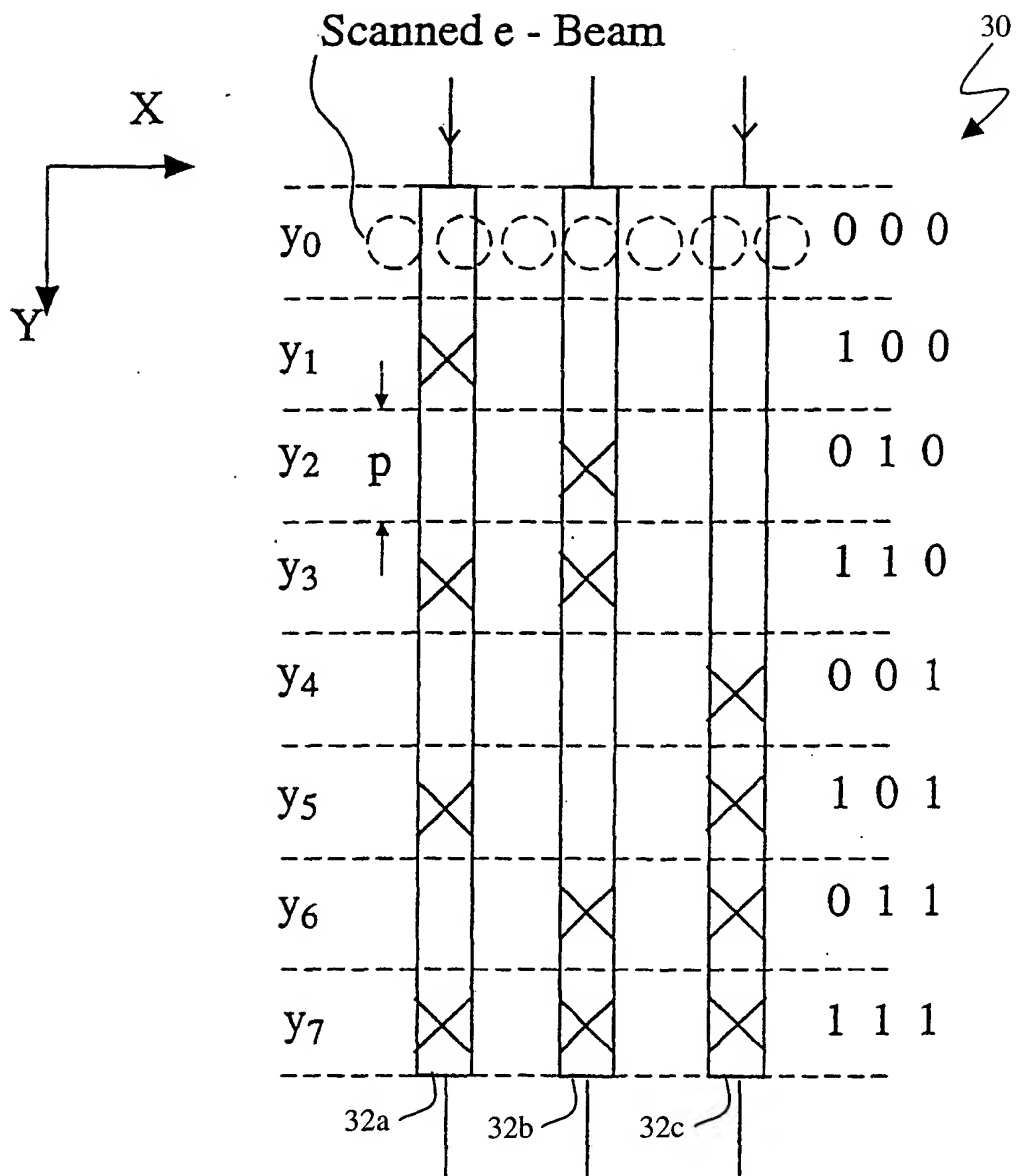


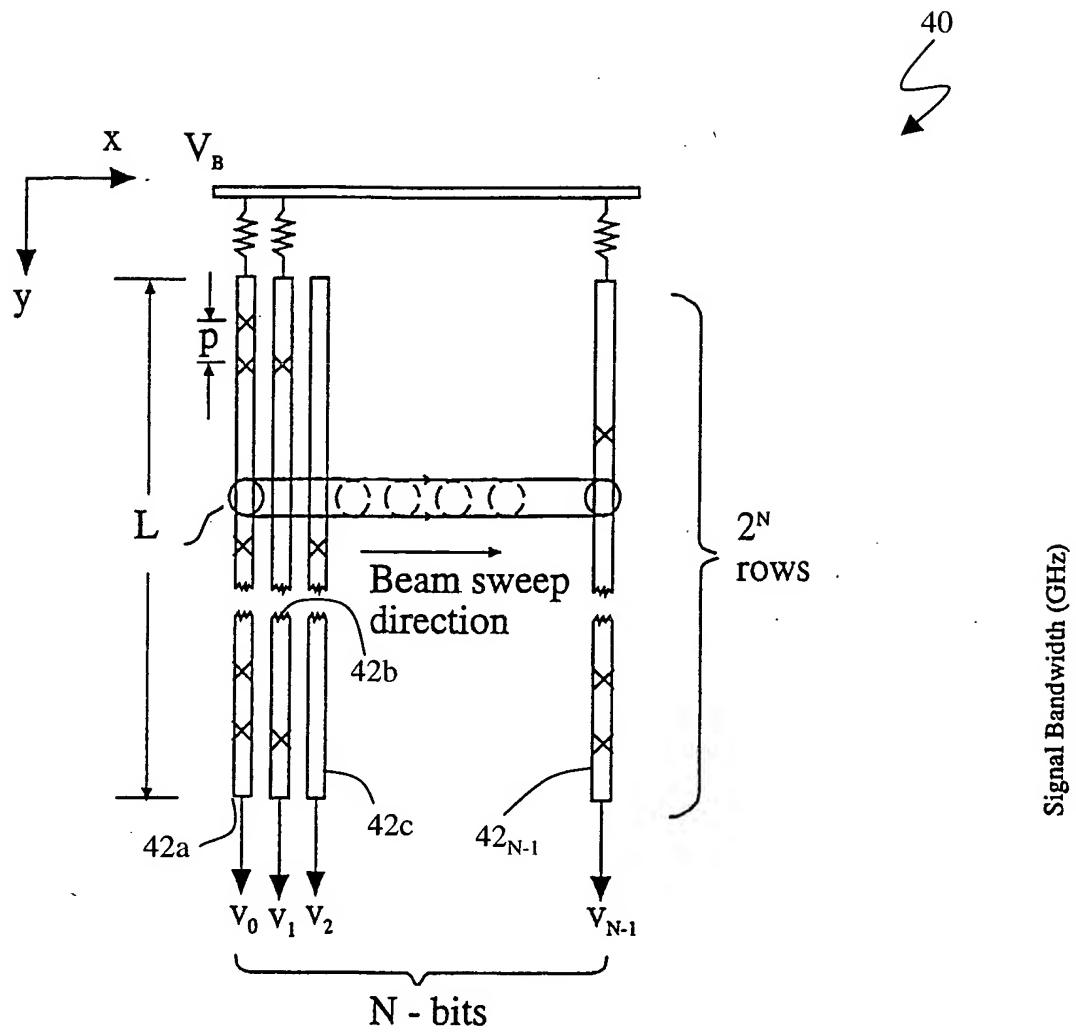
**FIG. 1** Current - volt characteristics of weaklink JJ device



**FIG. 2** *e-beam excited dispersionless HTC superconducting line matched at both ends and contains weak links in series*

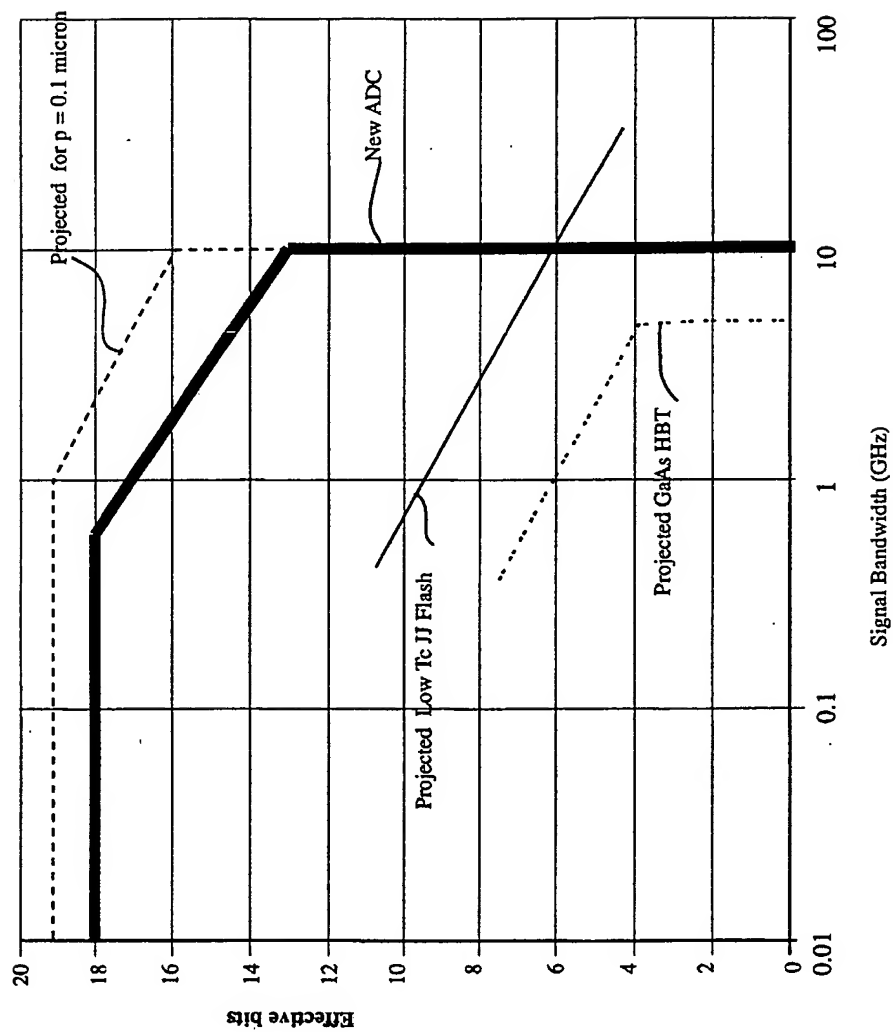


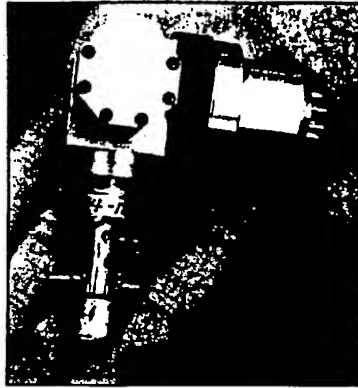
**FIG. 3** *3-bit e-beam excited superconducting ADC*



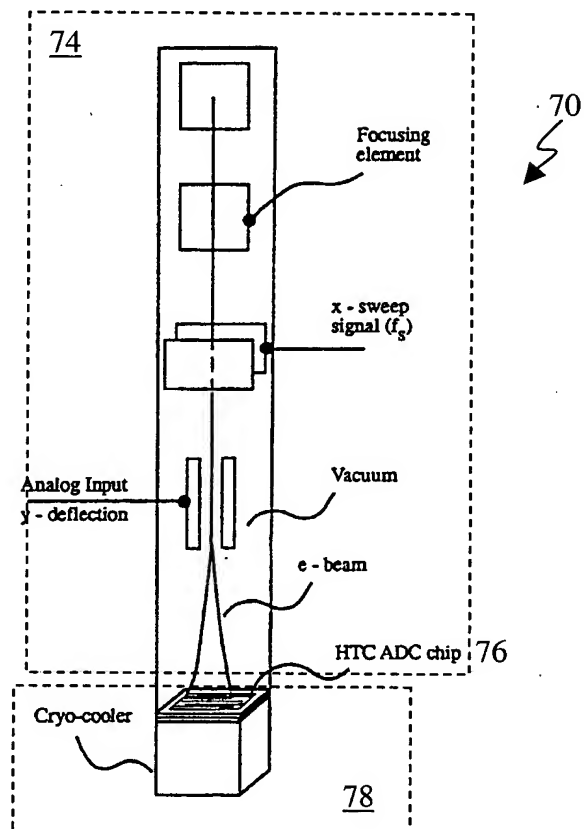
**FIG. 4** *N-bit e-beam excited superconducting ADC*

Fig. 5 Performance of proposed e-beam ADC compared with other technologies





**FIG. 6 - Miniature Stirling closed-cycle refrigerator built by Inframetrics Inc., N. Billerica, MA**



**FIG. 7 Schematic diagram of ultra-high performance ADC system**